

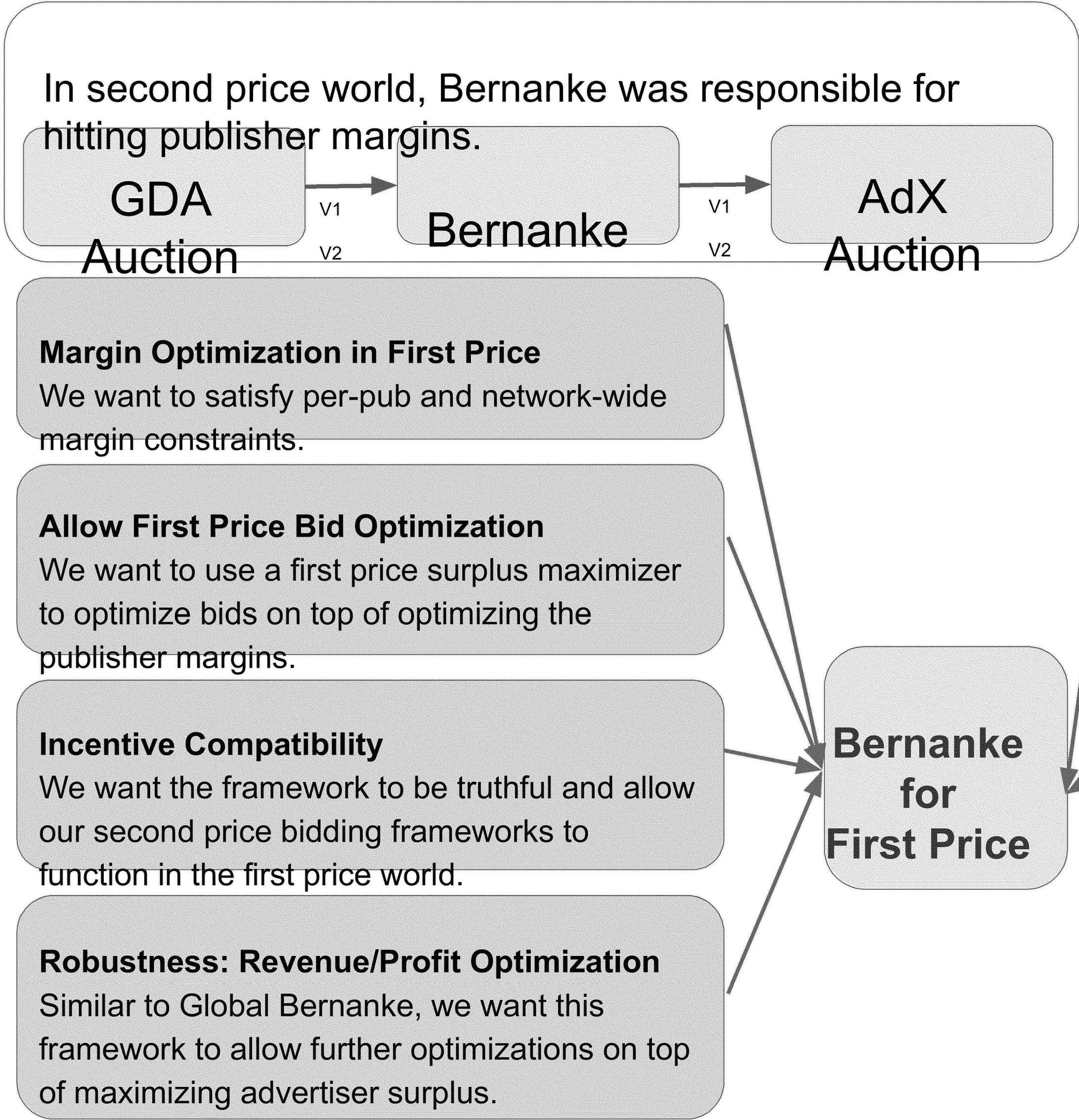
# **EXHIBIT 194**

## **REDACTED**



# First Price Bernanke

## Background and Motivations



## Intuition

- Similar to Bernanke, we need a parameter ( ) that allows us to increase/decrease the margin and bid optimally:
  -
- Similarly, we need a parameter ( ) that tunes the arbitrage created from having an internal second price auction while submitting first price bid:
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  - 
  -

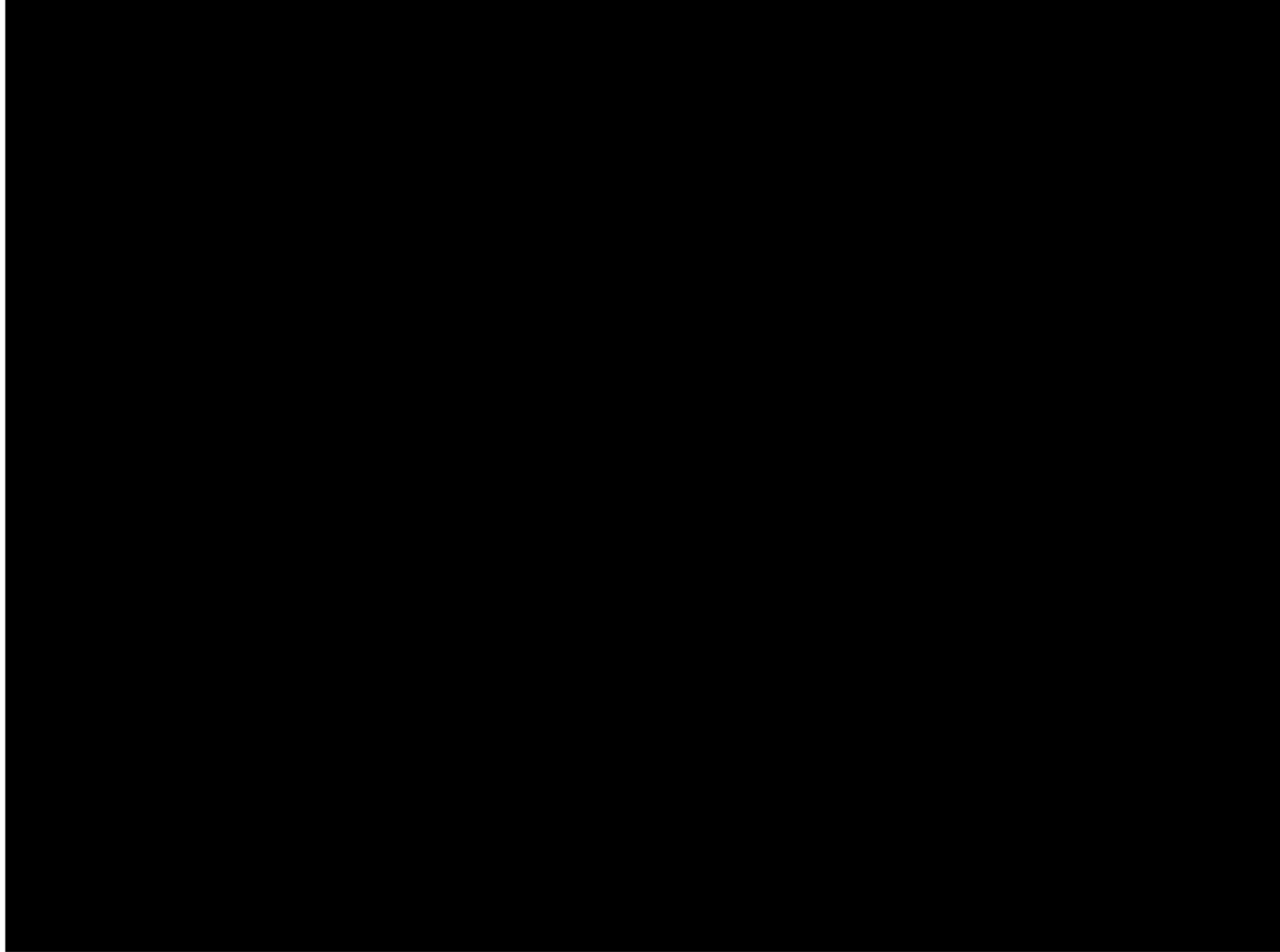
# First Price Bernanke

- Offline (Training):** Use data from background experiments with different alpha and beta multipliers per pub that hit a global margin and satisfy per pub margin.
- Online (Serving):** For a query q with publisher s where the winner and runner-up of Adword Mini-Auction have  $\mathbf{\text{[redacted]}}$  and  $\mathbf{\text{[redacted]}}$  respectively:
  - Winner is charged enough to beat both internal and external competition.

## Impact

Compared to	Revenue	Payout	Value
Bid Translation	$\mathbf{\text{[redacted]}}$	$\mathbf{\text{[redacted]}}$	$\mathbf{\text{[redacted]}}$
Just Maximizing Surplus	$\mathbf{\text{[redacted]}}$	$\mathbf{+ [redacted]}$	$\mathbf{\text{[redacted]}}$

## Background Experiments



## High Level Design:

